

VERSIONS WITH MARKING TO SHOW CHANGES MADE

In the Claims

1. (Amended) An electronic device comprising:
 - a dielectric substrate having a first surface and a second surface, and a via connecting the first and second surfaces, wherein the via has a horizontal cross sectional area substantially coplanar with the first or second surface;
 - a first and a second sacrificial copper structure deposited onto the first and the second surface and surrounding the via, respectively, wherein each of the first and second sacrificial copper structures covers an area of no more than three times the horizontal cross sectional area of the via; and
 - a via fill material disposed within the via, on the first and second sacrificial copper structure, and at least partially on the first and second surface;

wherein the first and the second sacrificial copper structures are formed on the substrate via a photolithographic process.
2. An electronic device of claim 1 wherein the substrate comprises a wiring board.
3. An electronic device of claim 2 wherein the first and the second surface of the dielectric material comprise a copper layer.
4. An electronic device of claim 1 wherein the via has a via surface, and wherein the via surface comprises copper.
5. The electronic device of claim 4 wherein the copper of the via surface and the first and second sacrificial copper structure are formed in a single process.
6. The electronic device of claim 1 wherein the via has a via diameter, wherein the first and second sacrificial copper structures have a first and second structure diameter, respectively, and wherein at least one of the first and second structure diameters are 150 ~~micon~~ micrometers larger than the via diameter.

- ~~7. The electronic device of claim 1 further comprising a via fill material disposed within the via.~~
8. (Amended) The electronic device of claim 7 1 wherein the via fill material comprises a resin.
- ~~9. The electronic device of claim 7, wherein the via fill material is further disposed on the substrate in an area other than the via, and further comprising a photoresist layer between the first surface and the via fill material.~~
10. The electronic device of claim 1 wherein each of the first and second sacrificial copper structures covers an area of no more than two times the horizontal cross sectional area of the via.

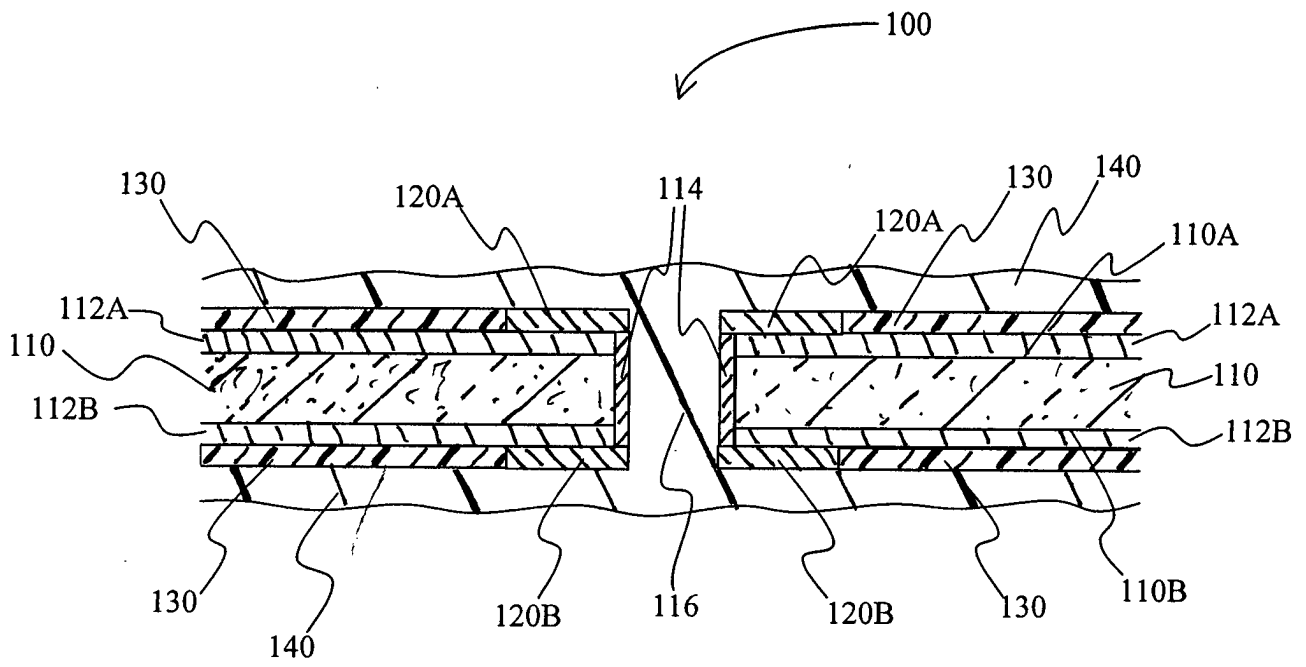


Figure 1

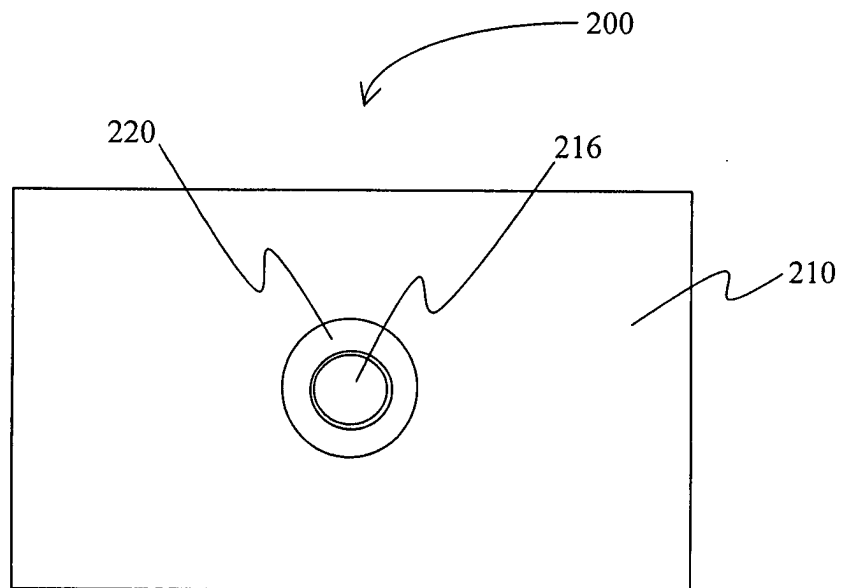


Figure 2

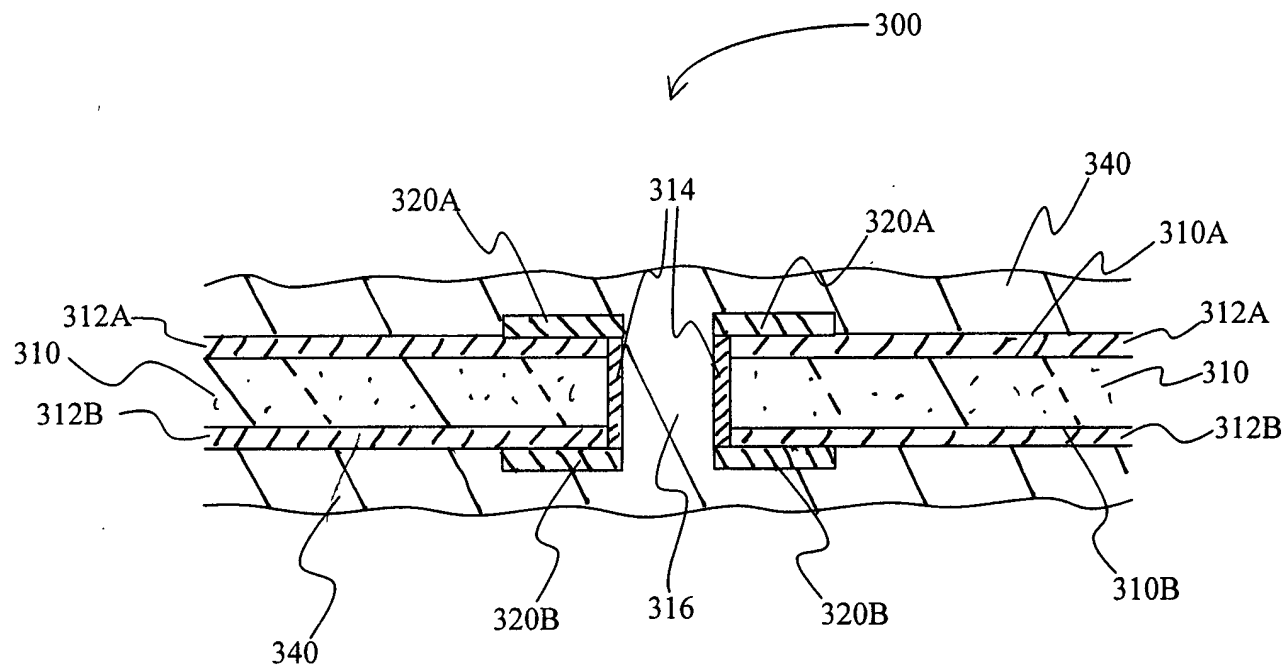


Figure 3